IN THE SPECIFICATION

Please amend the specification paragraph starting on page 7 line 16 as follows:

(f) using an oscillometric signal to calibrate tonometric pressure signals in a contralateral arterial site.

In some embodiments, a calibrated radial pressure waveform $P_r(t)$ is derived from the tonometric signal $S_r(t)$ as follows:

$$P_r(t)=(1/a_r)(S_r(t)-b_r)+p$$

where $a_r = (S_r(t_D)-S_r(t_M)) / (DBP-MBP)$,

$b_r = S_r(t_M) - a_r\ MBP$, and

$p=\underline{\rho}gh$ are calibration factors, and where

$\underline{\rho}$ = density of blood,

g = acceleration to gravity,

h = height difference between the oscillometric and the tonometric measurement sites, and is zero if the patient is supine,

MBP is oscillometric mean arterial blood pressure measured at time t_M, and

DBP is oscillometric diastolic blood pressure measured at time t_D.

Please amend the specification paragraph starting on page 11 line 2 as follows:

In some embodiments, two pressure points are needed for calibration. In one such embodiment, MBP (mean arterial blood pressure) and DBP (diastolic blood pressure) are chosen, and respective corresponding times t_M and t_D (shifted to the appropriate time within a cardiac cycle, e.g., t_D is shifted to the nearest pulse minimum) are used:

$S_r(t_M) = a_r \;\; MBP + b_r$

$S_r(t_D) = a_r \;\; DBP + b_r$

$a_r = (S_r(t_D)-S_r(t_M)) / (DBP-MBP)$

$b_r = S_r(t_M) - a_r \;\; MBP$

The radial artery is approximately six inches below the brachial artery. This creates a hydrostatic pressure head that can be accommodated by a further pressure head correction factor of $p=\underline{\rho}\, gh$, where

$\underline{\rho}$ = density of blood (= 1.03 g/cm^3)

g = acceleration to gravity (= 980 cm/sec^2)

h = 6" 15 cm

thus p = 1.03 g/cm^3 980 cm/sec^2 15 cm = 15141 g/cm sec^2

11 mm Hg if sitting (or 0 if supine)

and the calibrated radial pressure waveform $P_r(t)$ is derived from the Radial Signal $S_r(t)$ as follows:

$P_r(t)=(1/a_r)(S_r(t)-b_r)+ p$

Please amend the specification paragraph starting on page 13 line 11 to add a small space between r and t in the equation to avoid confusion with π (pi) as follows:

Examples

$f_{infl}(t) = k \Rightarrow n_c(t) = n_o + kt$

(inflation)

$$\cancel{f_{defl}(t) = kn_c \Rightarrow n_c(t) = n_o + (n_{max} - n_o)^{-rt}}$$

$$\underline{f_{defl}(t) = kn_c \Rightarrow n_c(t) = n_o + (n_{max} - n_o)e^{-r\,t}}$$

(deflation)

Constant r can be obtained for a particular oscillometric device as

$$r = -\frac{1}{t_{.01}} \ln \frac{0.01 n_o}{n_{max} - n_o}, t_{.01} x$$

time to 99% complete deflation.

Please amend the specification paragraph starting on page 15 line 1 as follows:

Using this signal, identify the peaks and nadirs of the individual pulses using a preferred algorithm (e.g., as in the ~~'133~~ '313 patent).

Please amend the specification paragraph starting on page 21 line 16 as follows:

We obtain stroke volume as

Equation (15): $SV = \int flow(t)dt = \int A(t)v(t)dt \underline{\approx} \sum t_{\ n=1,N} A[n]v[n]$

where A(t) is ascending aortic cross-sectional area as a function of time, v(t) is ascending aortic blood velocity as a function of time, A[n] and v[n] are the corresponding sampled data values, t is the sampling interval, and N is the number of data points in a single cardiac cycle. Here the integral is approximated with a simple sum, but any appropriate numerical integration could be used to obtain higher precision (e.g. a high-order Newton-Cotes). A[n] and v[n] are obtained as

Equation (16): $A[n] = {}_{i}\, h_A[n-i]P_2[i]$

Equation (17): $v[n] = {}_{i}\, h_v[n-i]P_2[i]$

Please amend the specification paragraph starting on page 25 line 6 as follows:

In some embodiments, the first method further includes (f) using an oscillometric signal to calibrate tonometric pressure signals in a contralateral arterial site. In some embodiments, a calibrated radial pressure waveform $P_r(t)$ is derived from the tonometric signal $S_r(t)$ as follows:

$P_r(t)=(1/a_r)(S_r(t)-b_r)+ p)$

where $a_r = (S_r(t_D)-S_r(t_M)) / (DBP-MBP)$,

$b_r = S_r(t_M) - a_r\ MBP$, and

$p=\underline{\rho}\,gh$ are calibration factors, and where

$\underline{\rho}$ = density of blood,

g = acceleration to gravity,

h = height difference between the oscillometric and the tonometric measurement sites, and is zero if the patient is supine,

MBP is oscillometric mean arterial blood pressure measured at time t_M, and DBP is oscillometric diastolic blood pressure measured at time t_D.

Please amend the specification paragraph starting on page 27 line 5 as follows:

In some embodiments, the computer derives a calibrated radial pressure waveform $P_r(t)$ from the tonometric signal $S_r(t)$ as follows:

$P_r(t)=(1/a_r)(S_r(t)-b_r)+ p$

where $a_r = (S_r(t_D)-S_r(t_M)) / (DBP-MBP)$,

$b_r = S_r(t_M) - a_r\ MBP$, and

$p=\underline{\rho}gh$ are calibration factors, and where

$\underline{\rho}$ = density of blood,

g = acceleration to gravity,

h = height difference between the oscillometric and the tonometric measurement sites, and is zero if the patient is supine,

MBP is oscillometric mean arterial blood pressure measured at time t_M, &

DBP is oscillometric diastolic blood pressure measured at time t_D.

In some embodiments, the computer system further calculates a first compliance value based on the calibrated radial pressure waveform, estimates end-effects of the oscillometric signal, and corrects the first compliance value using the estimated end effects.